



**CITY OF LODI  
COUNCIL COMMUNICATION**

**AGENDA TITLE:** Adopt Resolution Authorizing the City Manager to Enter Into a Professional Services Agreement for an Electric System Arc Flash Study with RW Beck, Inc. of Hendersonville, TN (\$39,900) (EUD)

**MEETING DATE:** August 4, 2010

**PREPARED BY:** Electric Utility Director

**RECOMMENDED ACTION:** Adopt a resolution authorizing the City Manager to enter into a Professional Services Agreement for an Electric System Arc Flash Study with RW Beck, Inc. of Hendersonville, TN in the amount of \$39,900.

**BACKGROUND INFORMATION:** The Occupational Safety and Health Administration requires employers to assess the workplace to determine if hazards are present, or likely to be present, and have each employee use appropriate personal protection equipment. Regulations require employers to perform a flash hazard analysis on electrical power systems to determine the level of hazard and the appropriate protective equipment to avoid potential electrical arc-flash injuries such as shock, burns, hearing loss, arc blast, shrapnel, lung damage or even death.

The Electric Utility's existing arc flash study is outdated. In November 3, 2004, an initial arc flash study was conducted only for substations. Since then, significant changes to the City's electric distribution system include load growth, distribution upgrades, and reconstruction of Killelea Substation, all of which limit the applicability of that study.

To improve safety, EUD would like to upgrade the arc flash study for the electric distribution system to comply with industry standards. RW Beck, Inc., has been identified as the company best-suited to perform this work because it recently created a model of the EUD's electric distribution system for power flow studies. That model will be used in the arc flash study. RW Beck's familiarity with Lodi's electric system means a lower-cost study with a faster turnaround time, making it the preferred contractor.

The study will be executed as described in RW Beck's proposal dated April 20, 2010.

**FISCAL IMPACT:** The professional services cost is \$39,900.

**FUNDING:** included in FY 2010/11 Budget Account No. 161652

*Jordan Ayers*  
 for Jordan Ayers  
 Deputy City Manager/Internal Services Director

*Elizabeth A. Kirkley*  
 Elizabeth A. Kirkley  
 Electric Utility Director

**Prepared by:** Demy Bucaneg, Jr. -PE, Assistant Electric Utility Director

**APPROVED:** *Konrad Bartlam*  
 Konrad Bartlam, Interim City Manager

# PROFESSIONAL SERVICES AGREEMENT

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This **PROFESSIONAL SERVICES AGREEMENT** (Agreement) is dated July 19, 2010, by and between R. W. Beck, Inc. (Consultant), with offices at 131 Saundersville Road, Suite 300, Hendersonville, TN, 37075 and City of Lodi, a Municipal Corporation (Client), with offices at City of Lodi, Electric Utility Department, 1331 South Ham Lane, Lodi, CA 95242.

**NOW, THEREFORE** in consideration of the promises herein and for other good and valuable consideration, the parties agree as follows:

1. **Scope of Services:** Consultant and Client agree Consultant will perform an electric system arc flash study as described in the Scope of Services attached as Exhibit A in accordance with the schedule set forth therein.
2. **Independent Contractor:** Consultant is an independent contractor and is not an employee of Client. Services performed by Consultant under this Agreement are solely for the benefit of Client. Nothing contained in this Agreement creates any duties on the part of Consultant toward any person not a party to this Agreement.
3. **Standard of Care:** Consultant will perform services under this Agreement with the degree of skill and diligence normally practiced by professional engineers or consultants performing the same or similar services. No other warranty or guarantee, expressed or implied, is made with respect to the services furnished under this Agreement and all implied warranties are disclaimed.
4. **Changes/Amendments:** This Agreement and its exhibits constitute the entire agreement between the Parties and together with its exhibits supersede any prior written or oral agreements. This Agreement may not be changed except by written amendment signed by both Parties. The estimate of the level of effort, schedule and payment required to complete the Scope of Services, as Consultant understands it, is reflected herein. Services not expressly set forth in this Agreement or its exhibits are excluded. Consultant shall promptly notify Client if changes to the Scope of Services affect the schedule, level of effort or payment to Consultant and the schedule and payment shall be equitably adjusted. If Consultant is delayed in performing its services due to an event beyond its control, including but not limited to fire, flood, earthquake, explosion, strike, transportation or equipment delays, act of war, or act of God, then the schedule or payment under the Agreement shall be equitably adjusted, if necessary, to compensate Consultant for any additional costs due to the delay.
5. **Fee for Services:** The fee for the services under this Agreement will be based on a fixed fee of Thirty-Nine Thousand, Nine Hundred Dollars (US \$39,900) for the Scope of Services outlined in this Agreement.



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## PROFESSIONAL SERVICES AGREEMENT

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6. **Payment:** Client shall pay Consultant for services furnished under this Agreement based upon monthly invoices which estimate the proportion of the services completed. Client shall pay Consultant in U.S. dollars within thirty (30) days of receipt of invoices less any disputed amounts. If Client disputes any portion of the invoice, the undisputed portion will be paid and Consultant will be notified in writing, within ten (10) days of receipt of the invoice of the exceptions taken, Consultant and Client will attempt to resolve the payment dispute within sixty (60) days or the matter may be submitted to arbitration as provided below. If Client fails to pay undisputed invoiced amounts within sixty (60) days after delivery of invoice, Consultant, at its sole discretion, may suspend services hereunder or may initiate collections proceedings, including mandatory binding arbitration, without incurring any liability or waiving any right established hereunder or by law.
7. **Indemnity:** To the extent permitted by law, Consultant agrees to indemnify, defend and hold harmless Client and its elected officials, directors, officers, shareholders and employees from and against any liability (including without limitation, reasonable costs and attorneys' fees) incurred by Client to the extent caused by Consultant's negligent acts, errors or omissions, including judgments in favor of any third party.

To the extent permitted by law, Client agrees to indemnify, defend and hold harmless Consultant and its directors, officers, shareholders, employees, and subconsultants from and against any liability (including, without limitation, reasonable costs and attorney's fees) incurred by Consultant to the extent caused by Client's negligent acts, errors or omissions, including judgments in favor of any third party.

Each party (the First Party) specifically and expressly waives its immunity under applicable worker's compensation and industrial insurance laws regarding liability against the other party (the Second Party) for actions brought by any of the First Party's employees against the Second Party, to the extent the liability is caused by the First Party's negligent acts, errors or omissions.

8. **Reperformance of Services:** If Client believes any of the services provided under this Agreement do not comply with the terms of this Agreement, Client shall promptly notify Consultant to permit Consultant an opportunity to investigate. If the services do not meet the applicable standard of care, it will promptly reperform the services at no additional cost to Client, including assisting Client in selecting remedial actions. If Client fails to provide Consultant with prompt notice of non-compliance and an opportunity to investigate and reperform its services, Consultant's total obligation to Client will be limited to the costs Consultant would have incurred to reperform the services.
9. Section Intentionally Left Blank.

## PROFESSIONAL SERVICES AGREEMENT

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- 10. Insurance:** Consultant shall maintain insurance with the following required coverages and limits and upon execution of this agreement, will provide a Memorandum of Insurance to Client:

Worker's Compensation	Statutory
Employer's Liability	U.S. \$1,000,000
Commercial General Liability	U.S. \$1,000,000 per occurrence
	U.S. \$1,000,000 aggregate
Commercial Auto Liability	U.S. \$1,000,000 combined single limit
Professional Liability	U.S. \$1,000,000 per claim and in the aggregate

- 11. Work Product:** Client shall have the unrestricted right to use the documents, analyses and other data prepared by Consultant under this Agreement (Work Products); provided, however Client shall not rely on or use the Work Products for any purpose other than the purposes under this Agreement and the Work Products shall not be changed without the prior written approval of Consultant. If Client releases the Work Products to a third party without Consultant's prior written consent, or changes or uses the Work Products other than as intended hereunder, (a) Client does so at its sole risk and discretion, (b) Consultant shall not be liable for any claims or damages resulting from the change or use or connected with the release or any third party's use of the Work Products and (c) Client shall indemnify, defend and hold Consultant harmless from any and all claims or damages related to the release, change or third party use.
- 12. Limitation of Liability:** No employee of Consultant shall have individual liability to Client. To the extent permitted by law, the total aggregate liability of Consultant, its officers, directors, shareholders, employees and subconsultants for any and all claims arising out of this Agreement, including attorneys' fees, and whether caused by negligence, errors, omissions, strict liability, breach of contract or contribution, or indemnity claims based on third party claims, shall not exceed the revenue received by Consultant under this Agreement or one hundred fifty thousand dollars (U.S. \$150,000.00), whichever is greater.
- 13. No Consequential Damages:** In no event and under no circumstances shall Consultant be liable to Client for any principal, interest, loss of anticipated revenues, earnings, profits, increased expense of operation or construction, loss by reason of shutdown or non-operation due to late completion or otherwise or for any other economic, consequential, indirect or special damages.
- 14. Information Provided by Others:** Client shall provide to Consultant in a timely manner any information Consultant indicates is needed to perform the services hereunder. Consultant may rely on the accuracy of information provided by Client and its representatives.

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**15. Opinions of Cost:** Consultant does not control the cost of labor, materials, equipment or services furnished by others, nor does it control pricing factors used by others to accommodate inflation, competitive bidding or market conditions. Consultant estimates of operation expenses or construction costs represent its best judgment as an experienced and qualified professional and are not a guarantee of cost. This section does not apply to the cost of Consultant performing the Scope of Services.

**16. Safety and Security:** Consultant has established and maintains programs and procedures for the safety of its employees. Unless specifically included as a service to be provided under this Agreement, Consultant specifically disclaims any authority or responsibility for job site safety and safety of persons other than Consultant's employees. Consultant shall not provide any such services and disclaims any responsibility under this Agreement related to site security or the assessment, evaluation, review, testing, maintenance, operation or safety practices or procedures related to security.

**17.** Section Intentionally Left Blank.

**18. Termination:** Either party may terminate this Agreement upon thirty (30) days prior written notice to the other party. Client shall pay Consultant for all services rendered to the date of termination plus reasonable expenses for winding down the services. If either party defaults in its obligations hereunder, the non-defaulting party, after giving seven (7) days written notice of its intention to terminate or suspend performance under this Agreement, may, if cure of the default is not commenced and diligently continued, terminate this Agreement or suspend performance under this Agreement.

**19. Dispute Resolution:** Consultant and Client shall attempt to resolve conflicts or disputes under this Agreement in a fair and reasonable manner and agree that if resolution cannot be made to attempt to mediate the conflict by a professional mediator (except for payment disputes which may be submitted directly to arbitration). If mediation does not settle any dispute or action which arises under this Agreement or which relates in any way to this Agreement or the subject matter of this Agreement within ninety (90) days after either requests mediation, the dispute or conflict shall be subject to arbitration in English under the Construction Industry Arbitration Rules as promulgated by the American Arbitration Association and arbitrability shall be subject to the Federal Arbitration Act. Venue for mediation and arbitration under this Agreement shall be in San Joaquin County, California.

**20.** Section Intentionally Left Blank.

# PROFESSIONAL SERVICES AGREEMENT

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21. **Litigation Expenses:** Client will be responsible for payment of all expenses and costs associated with Consultant's compliance with a subpoena or Client request to produce documents, data or testimony relating to any proceeding relating to any information pertaining to Client's project or to the work Consultant performed for Client, excluding any litigation or proceeding between Client and Consultant. These costs will include hourly charges for persons involved in responding to a subpoena or Client request, travel and reproduction expenses, advice and participation of counsel in responding to a subpoena and other request and other reasonable expenses. Consultant will endeavor to confer with Client prior to responding to any subpoena or request covered by this paragraph.

22. **Non Exclusivity of Services:** Consultant may perform for other clients similar or identical services to those services contemplated under this Agreement, subject to applicable confidentiality and ethical obligations of Consultant. In the event Client desires any level of exclusivity or other limitations on Consultant's services to its other clients, Client and Consultant shall confer regarding the scope of requested exclusivity or other limitations and the additional compensation to be paid to Consultant for the requested exclusivity or other limitations on providing services to other clients. Any agreed exclusivity or other limitations on providing similar or identical services shall be confirmed in writing signed by both parties and shall expressly state such provision shall supersede this Section 22. No fiduciary or agency obligations shall be created as a result of any exclusivity obligations or other limitations on Consultant's services to other clients.

23. **Miscellaneous:**

- a. This Agreement is binding upon and will inure to the benefit of Client and Consultant and their respective successors and assigns. Neither party may assign its rights or obligations hereunder without the prior written consent of the other party.
- b. Any notice required or permitted by this Agreement to be given shall be deemed to have been duly given if in writing and delivered personally or five (5) days after mailing by first-class, registered, or certified mail, return receipt requested, postage prepaid and addressed as follows:

Client: City of Lodi Electric Utility Department,  
Attention: Mr. Demetrio S Bucaneg, Jr  
Assistant Electric Utility Director  
Address: 1331 South Ham Lane  
Lodi, CA 95242

Consultant: R. W. Beck, Inc.  
Attention: Office Supervisor  
Address: 131 Saundersville Road,  
Suite 300,  
Hendersonville, TN 37075

## PROFESSIONAL SERVICES AGREEMENT

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With copies to:

Legal Department (which will not be considered notice)  
1001 Fourth Avenue, Suite 2500  
Seattle, WA 98154-1004  
USA

Office of the City Attorney  
City of Lodi  
221 West Pine Street  
Lodi, CA 95240

- c. Client expressly agrees that all provisions of the Agreement, including the clause limiting the liability of Consultant, were mutually negotiated and that but for the inclusion of the limitation of liability clause in the Agreement, Consultant's compensation for services would otherwise be greater and/or Consultant would not have entered into the Agreement.
- d. If any provision of this Agreement is invalid or unenforceable, the remainder of this Agreement shall continue in full force and effect and the provision declared invalid or unenforceable shall continue as to other circumstances.
- e. This Agreement shall be governed by, and construed in accordance with, the laws of the State of California.
- f. In any action to enforce or interpret this Agreement, the prevailing party shall be entitled to recover, as part of its judgment, reasonable attorneys' fees and costs from the other party.
- g. This Agreement shall not be construed against Consultant only on the basis that Consultant drafted the Agreement.
- h. Notwithstanding any statute to the contrary, the Parties agree that any action to enforce or interpret this Agreement shall be initiated within two (2) years from the time the party knew or should have known of the fact giving rise to its action, and shall not in any case be initiated later than six (6) years after Consultant completes its Scope of Services under this Agreement.
- i. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original instrument, but all of which taken together shall constitute one instrument.

## PROFESSIONAL SERVICES AGREEMENT


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IN WITNESS WHEREOF, the Parties have signed this Agreement the date first written above.

**CITY OF LODI, A MUNICIPAL  
CORPORATION**

**R. W. BECK, INC.**

Signature \_\_\_\_\_  
Name \_\_\_\_\_  
Title \_\_\_\_\_  
Date \_\_\_\_\_

Signature   
Name Keith Mullen  
Title Senior Project Manager  
Date July 19, 2010

**Approved as to form** \_\_\_\_\_

**Deputy City Attorney** 

April 20, 2010



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Demetrio S. Bucaneg, Jr., P.E.  
Assistant Electric Utility Director  
City of Lodi Electric Utility Department  
1331 S. Ham Lane  
Lodi, CA 9522-3995

**Subject: Electric System Arc Flash Study**

Dear Mr. Bucaneg:

The 2007 NESC 410.A.3 rule states, "effective January 1, 2009, the employer shall ensure that an assessment is performed to determine potential exposure to an electric arc for employees who work on or near energized parts or equipment." Based on this requirement, the City of Lodi Electric Utility Department (Lodi) desires the development of an Electric System Arc Flash Study.

Lodi serves approximately 28,910 electric customers located in Lodi, California. Lodi provides service through a 60/34.6 kV sub-transmission system and 29 distribution feeders operated at 12.0/6.9 kV. Analysis of the Lodi electric system will be based on the following:

- IEEE Standard 1584
- Current engineering models of the existing system
- Arc Flash module in Milsoft's version 7.3 of WindMil®
- ArcPro software from Kinectrics, Inc.
- Source impedances for the substations' 60/34.6 kV and 12.0/6.9 kV buses
- Existing overcurrent protection scheme, devices, and settings

We have prepared the following Scope of Services and will perform requested services using the approach detailed below.

## Scope of Services

### Task 1: Data Collection

The following data is required from Lodi for the development of the Electric System Arc Flash Study (electronic copies may be submitted, where appropriate):

- Up-to-date system models (WindMil) including:
  - The allocation of the most recent system peak loads
  - Substation source impedances
  - Recloser types, sizes, existing settings, and locations
  - Fuse types, sizes, and locations
  - Capacitor bank and regulator sizes and locations

- Primary wire sizes and lengths
- Standard distribution transformer sizes and manufacturer's specifications
- Standard distribution transformer fuse sizes

### Task 2: Model Device Database Development

R. W. Beck will review the existing WindMil engineering models of the Lodi electric system, and perform the following in preparation for the development of the Electric System Arc Flash Study. A total of 16 man-hours has been allocated to this task and includes the following:

- Update equipment definitions based on manufacturer's specifications and settings provided by Lodi for the following:
  - Substation relays/breakers
  - Line reclosers and fuses
  - Regulators and capacitors
- Verify the LightTable device database for protective devices in the WindMil® engineering models of the Lodi electric system
- Collaborate with Lodi to resolve warnings and errors identified in the existing WindMil engineering models of the Lodi electric system

### Task 3: Kick-off Meeting

R. W. Beck will meet at the Lodi office to:

- Collect the remaining information requested
- Review and approve the existing WindMil engineering models of the Lodi electric system
- Discuss the following with the Lodi management and engineering staff:
  - Utility requirements and project scope
  - Arc Flash analysis methodology
  - Existing overcurrent protection philosophy and its potential impact on arc energy
  - Potential impact of the analysis results on system operations
  - Project schedule and responsibilities
- Submit a summary of information collected and discussed at the initial meeting to Lodi for review and approval

### Task 4: Arc Flash Analysis

R. W. Beck will utilize the WindMil models of the Lodi electric system to perform the following tasks:

- Determine the range of arc energy available based on the following:

- Calculated **range** of maximum fault currents available on the 60/34.6 kV and 12.0/6.9 kV buses and switchgear at the existing substations serving the Lodi system
- Calculated range of **maximum** fault currents available on the distribution system, based on the WindMil model
- Up to **15** standard transformers selected by Lodi will be added at the end of each line section in the WindMil model
- Calculated range of maximum **fault** currents available at the lugs of the distribution transformers added to the WindMil model, based on the standard sizes and manufacturer's specifications provided by Lodi
- Existing overcurrent protection scheme, device locations and settings
- Arc Flash module in WindMil's version 7.3
- ArcPro software from Kinectrics, Inc.
- a Summarize the calculated results in Cal/cm<sup>2</sup>
- a Provide a summary of the calculations to Lodi for review and approval

### Task 5: Draft Report Preparation

R. W. Beck will:

- Prepare a draft report describing the assumptions, analysis, and recommendations of the Electric System Arc Flash Study
- System map illustrating the calculated arc energy
- Submit the draft report to Lodi for review and approval

### Task 6: Draft Review Meeting

R. W. Beck will meet with Lodi management and engineering staff on-site for a one day meeting to review the existing draft report and discuss the following:

- Analysis methodology and assumptions
- Analysis results
- Recommended modifications to the draft report of the Electric System Arc Flash Study as necessary to create the final document

### Task 7: Final Document and Delivery

R. W. Heck will:

- Modify the draft report of the Electric System Arc Flash Study to create the final document for delivery to Lodi for the internal use, as necessary
- Finalize the system map illustrating the calculated arc energy
- Deliver three copies in a three-ring binder of the Final document and system map to Lodi

### Task 8: Presentation (Optional)

R. W. Beck will:

- Deliver a presentation of the analysis methodology, assumptions, and results for the Electric System Arc Flash Study to the Lodi engineering, operations, and management staff

### Fee for Services

R. W. Beck will provide the Scope of Services outlined in this Agreement for a fixed fee of Thirty-Nine Thousand, Nine Hundred Dollars (\$39,900), as broken out below. This proposal will remain valid for 45 days from the date given above.

Service	Fee	Initials
Distribution Arc Flash Analysis	\$29,800	
Transmission Arc Flash Analysis (1)	\$4,600	
Presentation (optional)	\$5,500	
<b>TOTAL</b>	<b>\$39,900</b>	

If this meets with your approval, please authorize on the following page and return one copy of this letter to my attention for our records. R. W. Beck will provide the services described herein pursuant to the accepted terms and conditions of the Professional Services Agreement between R. W. Beck and City of Lodi Electric Utility Department dated April 20, 2010.

## Additional Services

R. W. Beck can provide the following as additional services with written authorization from Lodi:

- Meeting(s) at Lodi's office in addition to the Kick-off Meeting included in Task 3 and the Draft Review Meeting in ~~Task~~ 6
- Recommendations to reduce the calculated arc energy
- Additional analysis to evaluate alternate system configurations and device settings

I will contact you to ensure the Scope of Services meets your needs. Thank you for the continued opportunity to provide our services to City of Lodi Electric Utility Department.

Sincerely,

**R. W. BECK, INC.**



Keith Mullen, P.E.  
Project Manager

## Authorization

**CITY OF LODI ELECTRIC UTILITY  
DEPARTMENT**

**R, W. BECK, INC.**

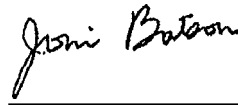
Signed \_\_\_\_\_

Printed \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

Signed



Printed Joni Batson, P.E.

Title Vice President - Transmission and  
Distribution Planning and Analysis

Date April 20, 2010

A RESOLUTION OF THE LODI CITY COUNCIL  
AUTHORIZING THE CITY MANAGER TO ENTER  
INTO A PROFESSIONAL SERVICES AGREEMENT  
WITH RW BECK, INC.

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WHEREAS, the Occupational Safety and Health Administration (OSHA) requires employers to assess the workplace to determine if hazards are present, or likely to be present, and have each employee use appropriate personal protection equipment (PPE). The National Electrical Code (NEC) states that equipment must be marked to warn of potential electrical arc-flash hazards. The National Fire Protection Association (NFPA) 70E states that a flash hazard analysis must be performed to determine the level of hazard and appropriate PPE for given tasks; and

WHEREAS, in November 3, 2004, an initial arc flash study was conducted for substation facilities only, however since that time, there have been significant changes in the City's electric distribution system; therefore, the arc flash study needs to be updated and expanded; and

WHEREAS, for safety, the Lodi Electric Utility Department would like RW Beck, Inc. to conduct, upgrade, and expand the Arc Flash Study for the electric distribution system in accordance with the Institute of Electrical and Electronics Engineers (IEEE) Standard 1584 and NFPA 70E. RW Beck has intimate knowledge of the Lodi system because of its recent work creating a model of the system for system power flow studies. That model will be used in the arc flash study. Thus, RW Beck can do the arc flash study best with the least additional work.

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council does hereby authorize the City Manager to enter into a professional services agreement with RW Beck, Inc. for performing the Electric System Arc Flash Study for the entire electric distribution system of the City of Lodi at a cost of \$39,900.

Dated: August 4, 2010

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I hereby certify that Resolution No. 2010-132 was passed and adopted by the City Council of the City of Lodi in a regular meeting held August 4, 2010, by the following vote:

AYES: COUNCIL MEMBERS – Hansen, Hitchcock, Johnson, and  
Mayor Katzakian

NOES: COUNCIL MEMBERS – None

ABSENT: COUNCIL MEMBERS – Mounce

ABSTAIN: COUNCIL MEMBERS – None

  
RANDI JOHL  
City Clerk